

Remarks

Claims 54-80 are pending in this application. In the non-final office action dated June 11, 2009, the Examiner rejected claims 54-80. Reconsideration of the rejected claims is respectfully requested in light of the amendments above and the remarks below.

1. Amendments to the Specification

Applicant presents a "marked-up copy" and a "clean copy" of a substitute specification to replace the previous specification. The substitute specification does not include any new matter. Applicant requests the Examiner to acknowledge in the next Office Action that the substitute specification does not include any new matter.

2. Rejection of Claims Under 35 U.S.C. § 112, First Paragraph

Claims 54-80 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. More particularly, the Examiner has stated that the rejected claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors had possession of the claimed invention at the time the application was filed.

During a telephone interview, the Examiner stated that the current claims would be sufficiently supported if the specification was amended to include language disclosed in the initially filed claims. Applicant respectfully thanks the Examiner for his time and comments during the telephone interview.

In accordance with the Examiner's comments, Applicant has included the following modifications to the substitute specification:

The recording of a potential difference, i.e. a bioelectrical signal, is achieved by pairs of electrode surfaces, one active (negative) and one reference (positive) electrode surface, constituting one recording pair between which the potential difference is detected. By using multiple electrode surfaces, the bioelectrical potential difference/s/ occurring at one detection site can be detected multiple times, by several recording pairs at this site, with the active electrode surface/s/ participating in

more than one recording pair. However, the present disclosure further contemplates that the bioelectrical potential difference/s/ occurring at one detection site may be determined multiple times using at least one active electrode surface and at least one reference electrode surface. The present disclosure further contemplates that the bioelectrical potential difference/s/ occurring at one detection site may be detected multiple times using at least one active electrode surface and a first and second reference electrode surface. Processing apparatus connected to the multielectrode, including an inversion and a summation unit, adds the recorded values of the bioelectrical potential differences detected by each recording pair, of which at least one of the values may be inverted before summation, thereby achieving an improved recording of the bioelectrical signal, i.e. regarding the signal-to-noise-ratio.

Applicant submits that the substitute specification does not include any new matter. As a result of the amendments presented above, Applicant respectfully requests reconsideration of the present rejection.

1. Rejection of Claims Under 35 U.S.C. § 112, Second Paragraph

Claims 65-75, 77, and 79 are rejected under *35 U.S.C. § 112*, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claims 77 and 79, the Examiner stated that the term “the recording” lacks antecedent basis. As a result of the amendments presented above, Applicant respectfully requests reconsideration of the rejections as to claims 77 and 79.

With respect to claim 65, the Examiner stated that it is unclear how the potential differences are recorded after the inverting step and prior to the summing step. During a telephonic interview, the Examiner stated that this rejection was based upon his review of the block diagram illustrated in Figure 6 as well as Paragraph [0066]. The Examiner elaborated that if the Applicant believed that the rejection was in error, the Applicant should explain how the specification particularly points out and distinctly claims the limitations of claim 65. Applicant thanks the Examiner for his time and explanation in

describing this rejection.

With respect to Figure 6, Applicant submits that two reference electrode surfaces (7a, 7b) and one active electrode surface (6) are illustrated. The first reference electrode surface 7a and the active electrode surface 6 may be used to receive at least a first low amplitude bioelectrical signal. Furthermore, Paragraph [0066] discloses that a processor may be used to detect and measure (*i.e.*, determine) a first bioelectrical potential difference based upon the first low amplitude bioelectrical signal. Paragraph [0066] further discloses that blocks 10a and 11a may be used to filter, record, invert, and delay the first bioelectrical potential difference.

Figure 6 further illustrates that the second reference electrode surface 7b and the active electrode surface 6 may be used to receive at least a second low amplitude bioelectrical signal. Furthermore, Paragraph [0066] discloses that the processor may be used to detect and measure (*i.e.*, determine) a second bioelectrical potential difference based upon the second low amplitude bioelectrical signal. Paragraph [0066] further discloses that blocks 10b and 11b may be used to filter, record, invert, and delay the first bioelectrical potential difference. Lastly, Paragraph [0066] discloses that the first and second bioelectrical potential differences may be summed.

With respect to claim 65, Applicant submits that the potential differences recorded after the inverting step and prior to the summing step are illustrated and described with respect to the second reference electrode surface 7b, the active electrode surface 6, block 10b and block 11b. As a result of the amendments and comments provided above, Applicant believes that claim 65 as amended above particularly points out and distinctly claim the subject matter as described in the specification. Applicant respectfully requests reconsideration of the present rejection as to claim 65 and each of the corresponding dependent claims.

2. Rejection to the Drawings

The Examiner rejected the drawings under 37 C.F.R. 1.83(a). More particularly, the Examiner has stated that the features of claims 62 and 70-75 are not properly illustrated.

With respect to the rejection of claim 62, Applicant has included the following modifications to the substitute specification:

According to another embodiment of the invented multielectrode, the carrier is provided with three or more needles of which the needle tip constitutes an electrode surface, or part of an electrode surface. Such a sterilized multielectrode is adapted to penetrate the skin of a patient. For example, with reference to Figure 4, the reference electrodes 7a, 7b and the active electrodes 6 are elevated away from the carrier 8. One or more of the elevated active and reference electrodes 6, 7a, 7b may be formed so as to include a needle tip adapted to penetrate the skin of a patient.

Again, Applicant submits that the substitute specification does not include any new matter. As a result of the amendments presented in the substitute specification, Applicant respectfully requests reconsideration of the present rejection as to claim 62.

With respect to claims 70-72, Applicant submits that the specification discloses that:

Figure 5 illustrates a fourth, exemplary embodiment of the invented multielectrode 5, having a circular electrode carrier 8, on the elevations of which separate electrode surfaces are attached. The multielectrode is provided with only one, centrally located, active electrode surface 6 and four groups, 7a, 7b, 7c, 7d, of reference electrode surfaces, each with three reference electrodes, these four groups surrounding the active electrode surface and positioned with approximately 90 degrees angular distance from each other. The carrier surface of this embodiment may have e.g. a circular, semicircular, semiellipsoid, partly rectangular or partly square extension. According to an alternative embodiment, the electrode surfaces are attached into recesses in this type of electrode carrier.... The size of the carrier of the invented multielectrode may vary considerably depending on the application of the multielectrode, but a rectangular carrier, according to the embodiment illustrated in figure 3, may have an approximate length of e.g. 5 cm, a width of e.g. 2.5 - 3.5 cm and a thickness of e.g. 1 - 1.5

cm. The electrode surfaces may be attached in the bottom of recesses in the carrier, the recess having a depth of e.g. 10 mm, a length of e.g. 20 mm and a width of e.g. 2-4 mm. The electrode surfaces may extend on the sides of the recess. Alternatively, the electrode surfaces may be attached, e.g. glued, on elevated parts of the surface of the carrier, the elevated parts having a height of approximately up to 10 - 15 mm, a length of e.g. 10 mm and a width of e.g. 1.5 mm. The electrode surfaces may extend on the sides of the elevated parts.

Applicant submits that the above exemplary description, in conjunction with Figure 5, adequately discloses the limitations of claim 70-72 without the need for an illustrative representation.

With respect to claim 73, Applicant submits that the specification discloses that:

Electrically conducting material, such as e.g. a gel or a moist absorbing fabric or felt soaked in e.g. saline, may be attached to the electrode surfaces in order to establish the contact between the electrode surface and the skin. The attachment may be achieved e.g. by pressing the electrically conducting material into recesses or wrapping it around elevations and holding it in place by plastic pieces or by appropriately adopted o-rings.

Applicant submits that the above exemplary description adequately discloses the limitations of claim 73 without the need for an illustrative representation.

With respect to claims 74-75, Applicant has included the following modifications to the substitute specification:

According to another embodiment of the invented multielectrode, the multielectrode is manufactured in a thin version, as a stick-on electrode, adapted to be fastened to the skin of a patient with adhesive tape. For example, with reference back to Figure 3, the multielectrode 5 may be manufactured so that the carrier 8 ~~The multielectrode~~ may be formed by one or more thin layer/s/ of mould of semi-elastic plastic. The multielectrode 5 may further be formed so that ~~which are provided with~~ various patterns of active and passive electrode surfaces 6, 7a, and 7b, may be positioned within carrier 8 so that the individual layers separated from each electrode surface is electrically separated other by the insulating layers. Although Figure 3 illustrates the active and passive electrode surfaces 6, 7a, and 7b substantially within the edges of the carrier 8, the present disclosure contemplates that at least a

portion of the active and passive electrodes 6, 7a, and 7b may extend beyond the edges of the carrier 8. By cutting and/or folding ~~of the~~ one or more carrier 8 layer/s/ and gluing them together, flat multielectrodes of different design may be achieved.

Again, Applicant submits that the substitute specification does not include any new matter. As a result of the amendments presented in the substitute specification, Applicant respectfully requests reconsideration of the present rejections as to claims 74-75.

CONCLUSION

Applicant has made a genuine effort to respond to the Examiner's objections and rejections in an effort to advance the prosecution of this case. Applicant believes that all formal and substantive requirements for patentability have been met and that this case is in condition for allowance, which action is respectfully requested.

Applicant believes that no new fee is due from the filing this Amendment. However, any fee due may be electronically charged or credit any overpayments as a result of the filing of this paper to our Deposit Account No. 02-3978.

Respectfully submitted,

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